

What is claimed is:

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Xv 5  
1. A method in a data processing system for producing a three-dimensional rotational image from a two-dimensional image including a plurality of objects, the method comprising the steps of:

assigning each object to one of a plurality of sequential layers that correspond to visually depicted depths of the objects in the two-dimensional image; and

rotatively displaying the objects to produce the three-dimensional rotational  
10 image.

2. The method of claim 1, wherein the objects are assigned to the layers so that within a given layer the object assigned to that layer neither overlaps with nor is included within another object in the given layer.

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3. The method of claim 1, wherein the step of rotatively displaying the objects further comprises the step of:

rotating the objects of each layer around a common rotational axis to form the three-dimensional rotational image having a maximum rotational angle around  
20 the rotational axis with each object in a first of the layers having a minimum rotational angle and objects in layers other than the first layer having a rotational angle greater than the minimum rotational angle and less than or equal to the maximum rotational angle.

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4. The method of claim 1, wherein the three-dimensional rotational image is symmetrical with respect to a plane in which the rotational axis is located.

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5. The method of claim 1, further comprising the step of:

when rotatively displaying the objects, modifying an area of each object by a predetermined scaling factor.

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6. The method of claim 1, further comprising the step of:  
prior to assigning the objects to the layers, ordering the objects in a  
sequence based on depths of the objects in the two-dimensional image.

5 7. The method of claim 6, wherein the objects are ordered so that the  
object having a greatest depth is first in the sequence.

8. The method of claim 6, wherein the objects are assigned to one of the  
plurality of sequential layers, beginning with a first object in the sequence.

10 9. A method in a data processing system for producing a three-  
dimensional rotational image from a two-dimensional image including a plurality of  
objects, the method comprising the steps of:

15 ordering the objects in a sequence based on depths of the objects in the two-  
dimensional image;

sequentially assigning each object in the sequence to one of a plurality of  
layers so that within a given layer an object assigned to that layer neither overlaps  
with another object in the given layer, nor is included within another object in the  
given layer;

20 rotating the objects of each layer around a common rotational axis to form  
the three-dimensional rotational image having a maximum rotational angle around  
the rotational axis with each object in a first of the layers having a minimum  
rotational angle and objects in layers other than the first layer having a rotational  
angle greater than the minimum rotational angle and less than or equal to the  
25 maximum rotational angle; and

displaying the three-dimensional rotational image.

10. A computer-readable medium containing instructions that cause a data processing system to perform a method for producing a three-dimensional rotational image from a two-dimensional image including a plurality of objects, the method comprising the steps of:

5        assigning each object to one of a plurality of sequential layers that correspond to visually depicted depths of the objects in the two-dimensional image; and

            rotatively displaying the objects to produce the three-dimensional rotational image.

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11. The computer-readable medium of claim 10, wherein the objects are assigned to the layers so that within a given layer the object assigned to that layer neither overlaps with nor is included within another object in the given layer.

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12. The computer-readable medium of claim 10, wherein the step of rotatively displaying the objects further comprises the step of:

            rotating the objects of each layer around a common rotational axis to form the three-dimensional rotational image having a maximum rotational angle around the rotational axis with each object in a first of the layers having a minimum rotational angle and objects in layers other than the first layer having a rotational angle greater than the minimum rotational angle and less than or equal to the maximum rotational angle.

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13. The computer-readable medium of claim 10, wherein the three-dimensional rotational image is symmetrical with respect to a plane in which the rotational axis is located.

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14. The computer-readable medium of claim 10, further comprising the step of:

30        when rotatively displaying the objects, modifying an area of each object by a predetermined scaling factor.

15. The computer-readable medium of claim 10, further comprising the step of:

prior to assigning the objects to the layers, ordering the objects in a sequence based on depths of the objects in the two-dimensional image.

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16. The computer-readable medium of claim 15, wherein the objects are ordered so that the object having a greatest depth is first in the sequence.

17. The computer-readable medium of claim 15, wherein the objects are  
10 assigned to one of the plurality of sequential layers, beginning with a first object in  
the sequence.

18. A computer-readable medium containing instructions that cause a  
data processing system to perform a method for producing a three-dimensional  
rotational image from a two-dimensional image including a plurality of objects, the  
method comprising the steps of:

ordering the objects in a sequence based on depths of the objects in the two-dimensional image;

sequentially assigning each object in the sequence to one of a plurality of layers so that within a given layer an object assigned to that layer neither overlaps with another object in the given layer, nor is included within another object in the given layer;

rotating the objects of each layer around a common rotational axis to form the three-dimensional rotational image having a maximum rotational angle around the rotational axis with each object in a first of the layers having a minimum rotational angle and objects in layers other than the first layer having a rotational angle greater than the minimum rotational angle and less than or equal to the maximum rotational angle; and

displaying the three-dimensional rotational image.

19. A data processing system for producing a three-dimensional rotational image from a two-dimensional image including a plurality of objects, the data processing system comprising:

a memory comprising a program that

5                assigns each object to one of a plurality of sequential layers that correspond to visually depicted depths of the objects in the two-dimensional image, and

                  rotatively displays the objects to produce the three-dimensional rotational image; and

10              a processing unit that runs the program.

20. The data processing system of claim 19, wherein the objects are assigned to the layers so that within a given layer the object assigned to that layer neither overlaps with nor is included within another object in the given layer.

15              21. The data processing system of claim 19, wherein the step of rotatively displaying the objects further comprises the step of:

                  rotating the objects of each layer around a common rotational axis to form the three-dimensional rotational image having a maximum rotational angle around the rotational axis with each object in a first of the layers having a minimum rotational angle and objects in layers other than the first layer having a rotational angle greater than the minimum rotational angle and less than or equal to the maximum rotational angle.

25              22. The data processing system of claim 19, wherein the three-dimensional rotational image is symmetrical with respect to a plane in which the rotational axis is located.

30              23. The data processing system of claim 19, further comprising the step of:

                  when rotatively displaying the objects, modifying an area of each object by a predetermined scaling factor.

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24. The data processing system of claim 19, further comprising the step  
of:

prior to assigning the objects to the layers, ordering the objects in a sequence based on depths of the objects in the two-dimensional image.

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25. The data processing system of claim 24, wherein the objects are ordered so that the object having a greatest depth is first in the sequence.

26. The data processing system of claim 24, wherein the objects are  
10 assigned to one of the plurality of sequential layers, beginning with a first object in  
the sequence.

27. A data processing system for producing a three-dimensional rotational image from a two-dimensional image including a plurality of objects, the data processing system comprising:

means for assigning each object to one of a plurality of sequential layers that correspond to visually depicted depths of the objects in the two-dimensional image; and

means for rotatively displaying the objects to produce the three-dimensional  
rotational image.

28. A computer-readable memory device encoded with a data structure  
with entries, each entry reflecting a layer associated with a visually depicted depth  
in a two-dimensional image including a plurality of objects, wherein a three-  
dimensional rotational image is produced from the two-dimensional image by a  
program which is encoded on the memory device and which is run by a processor  
in a system, each entry comprising:

a storage area in which is stored one of the plurality of objects assigned to the layer by the program, wherein the program rotatively displays the objects to produce the three-dimensional image.